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The abdomen is spotted. The preopercular, interopercular and suborbital regions, the membrane connecting the maxillary bones and the lower surface of the head, are covered with large dark brown dots. The fins are more or less distinctly banded or spotted; the ventrals whitish.

Specimens of this species were obtained by Dr. Kennerly, the naturalist of the North-Western Boundary Survey, and are also found at San Francisco, a large specimen being in the same lot containing the true *Hemilepidotus spinosus*, and confounded with it by Dr. Girard. From that species it differs in the number and arrangement of the cutaneous tags as well as by color.

I have dedicated the species to my friend, Mr. George Gibbs, who rendered much valuable assistance to the naturalist of the Survey. A detailed description will be given in the Report on the Ichthyology of the Western Coast.

On the Subfamily of ARGENTININÆ.

BY THEODORE GILL.

In the "Catalogue of the Fishes of the Eastern Coast of North America," the family of Salmonoids is divided, with Prince Bonaparte, into two subfamilies,—the Salmoninæ and Argentininæ,—but with the very important modification of the exclusion from the latter, as well as from the family itself, of the genus *Microstoma*. With Bonaparte also *Osmerus* is retained among the Salmoninæ, while *Mallotus* is placed in the subfamily of Argentininæ. The great error involved in this arrangement was subsequently discovered, but I unfortunately forgot to correct it in the Catalogue. The only character which thus separates the two subfamilies is the development of the teeth,—a character of secondary value. The two subfamilies are very distinct from each other, but distinguished chiefly by the modifications of the intestinal canal.

The Salmoninæ have the stomach nearly or quite siphonal, and the pyloric cæca are numerous.

The Argentininæ have the stomach decidedly cæcal, and the cæca are generally five in number, and surround the pyloric extremity of the stomach.

Dr. Kner, in his excellent contribution on the form of the stomach and the development of the pyloric cæca, has even suggested that *Osmerus* and its allies may belong to a different family; and it certainly appears quite probable that such is the case. The position of the Argentininæ, as a subfamily of the Salmonoids, is therefore provisional.

The Argentininæ, as now characterized, are divisible among two distinct groups; one has the normal salmonoid position of the dorsal fin, or, in other words, it is subcentral, and above or nearly above the ventrals. This group embraces all the common northern or European and American species.

Another group, represented by a single species, is distinguished by the posterior insertion of the dorsal and its position above the anus; the species is an inhabitant of Australasian seas, and has been described under the name of *Argentina retropinna*, by Sir John Richardson. The specific name may be accepted as a generic appellation, while the species can be called in honor of its learned describer, *Retropinna richardsonii*.

A species of the true Argentine group also is the type of a distinct genus nearly allied to Argentinæ, with which it agrees in the number of branchiostegal rays, but the mouth is larger, the dentition different and the ventral fins more advanced. Its type is the *Argentina pretiosa* of Girard, or *Osmerus elongatus* of Ayres. It may be named *Mesopus*, in allusion to the position of the ventral fins.

The following synopsis exhibits the relations and differential characters of the several genera:—

[Jan.

- I. Dorsal subcentral, above or nearly above the ventrals..... ARGENTINÆ.
 A. Branchiostegal rays 8. Mouth rather large. Ventrals under the front or in advance of dorsal.
 Scales of the male villose or pointed, in a lateral band. Pectoral and ventrals much developed.Mallotus.
 Scales alike and simple in both sexes. Pectorals and ventrals moderate.....Osmerus.
 AA. Branchiostegal rays 6. Mouth small; maxillar ceasing under front of eyes. Ventrals nearly under middle of dorsal.....Hypomesus.
 AAA. Branchiostegal rays 6. Mouth very small; maxillars not extending to eyes. Ventrals inserted under rear of or behind the dorsal.
 Scales cycloid.Argentina.
 Scales with exposed surface spinigerous.....Silus.
- II. Dorsal far behind, above anus.....RETROPINNÆ.
 Branchiostegal rays 6. Scales cycloid.....Retropinna.

The genus *Thaleichthys*, of Girard, has not been adopted, it appearing to be, as Dr. Ayres has already shown, identical with *Osmerus*. The latter gentleman has remarked, "that the very species which the describer takes as the type of *Thaleichthys*, has occasionally teeth on the palatines well developed; and one specimen in my possession shows even denticulations on the maxillaries."

There is a very considerable analogical resemblance between the group of Argentinæ and the Salmonine genus *Argyrosomus* of Agassiz,—a resemblance more especially manifested between the genus *Hypomesus* and the American *Argyrosomus albus* (*Coregonus albus*, Les.) and the *A. albulus* (*Coregonus albulus*, Val.) of Northern Europe. The likeness, however, appears simply to be one of analogy, and not indicative of close affinity.

Appendix to the Synopsis of the Subfamily of PERCINÆ.

BY THEODORE GILL.

Since the publication of the "Synopsis of the Subfamily of Percinæ," we have become acquainted with two quite distinct generic types which are now referred to their places in the system. This appendix will consequently perfect to date the synopsis, and exhibits the condition of our present knowledge of the Percinæ, with the exception, perhaps, of the relations of the *Labrax lyiuy* of Basilewski. That species does not appear to belong to *Labrax*, but rather to an unnamed genus, but the description is too defective to admit of its proper classification.

Genus CHORISTISTUM Gill.

Liopropoma? sp. *Poey*, Memorias sobre la Historia Natural de la Isla de Cuba vol. ii.

Body fusiform, with the caudal peduncle high and compressed. Head rather elongated, conic in profile and acute in front, but with the outline slightly curved. Lower jaw protuberant. Teeth villiform on the jaws, vomer and palatine bones. Preoperculum entire. Operculum armed with two spines. Scales on the whole body, except the muzzle. Dorsal fins entirely separated; the first with five spines diminishing from the second; the second dorsal with a single spine. Anal armed with three graduated spines, and with the soft portion elevated backwards. Caudal subtruncated. Lateral line anteriorly arched.

Type. *Chorististium rubrum*, *Gill*.

Syn. *Liopropoma?* *rubre*, *Poey*. Memorias sobre la Historia Natural de la Isla de Cuba. Tomo ii., p.

1862.]